

## MORE THAN SEEING AND BEING SEEN

**With the innovative Street Screen Technology, TRELOCK is the first manufacturer of bicycle lights to enter the field of "Vehicle-to-X communication" and thus raising the e-bike to eye level with the automobile. Thanks to visual communication between the e-bike, the rider and other road users through light animation on the road, the safety and comfort of the cyclist is significantly increased. The lighting concept developed by TRELOCK is to be implemented in the future with OEM partners from the premium e-bike segment.**

Previously, when talking bicycle lighting, the parameters for evaluation were largely more brightness, better illumination of the road or better visibility of the cyclist from a distance. This, or something similar, has been the definition of "seeing and being seen" in bicycle lighting up to now. Even though bicycle safety expert TRELOCK has already gone one step further since 2016 with its sensor brake light function, which has now become standard, the Münster-based



company has now reached the next and possibly groundbreaking stage of development: the TRELOCK Street Screen Technology. The Street Screen Technology is an intelligent lighting system for the e-bike that projects light animations in the form of images or videos onto the road, similar to what is known from the latest generations from the automotive industry. The system thus opens up completely new

possibilities for light communication and interaction between e-bike, the rider and other road users, with the light becoming an assistance system in road traffic. "Our engineers designed the Street Screen Technology as an innovative lighting concept specifically for e-bikes, and we want to show that our vision of the bicycle light of the future offers far more and sophisticated features that go beyond the usual see and be seen", comments Ralf Northoff, GPS Lights Engineering Manager at TRELOCK, AXA and Kryptonite.

### The road becomes a screen

The technology integrated in the headlight is based on a tiny module that has thousands of small moving micromirrors. This creates high-resolution animated images or videos that are projected onto the road. The road becomes a screen for the projection of a wide variety of visual content, which contributes significantly to the safety of the cyclist and other road users. The Street Screen technology refers to the light projection itself and can be combined with other

#### Press Contact:

...kernpunkt.PR  
Schraudolphstr. 3a  
80799 München  
Tel.: +49 1520 8695056  
info@kernpunktpr.de  
www.kernpunktpr.de

TRELOCK GmbH  
Johann-Krane-Weg 37  
48149 Münster  
Tel.: +49 251 91999-0  
TRELOCK@allegion.com  
www.TRELOCK.de

TRELOCK lighting competencies such as sensor, radar, temperature function or the e-bike system. But what can this look like in real terms? For example, the visual marking of a safety zone plays a role when a car gets too close to a cyclist while overtaking and fails to maintain the minimum distance. Arrow symbols transferred to the roadway, for example, visualize the



turning process to other road users. Danger symbols also warn oncoming traffic as soon as the cyclist has to brake abruptly or take evasive action. The cyclist can also be warned in situations where he is confronted with unexpected events, such as the spontaneous opening of a door by a parked car driver or reversing out of a parking space. In addition to the safety-relevant benefits in road traffic, the

Street Screen Technology also offers other practical comfort functions that alert the cyclist to the low battery status of the e-bike by means of corresponding light animations, remind the cyclist to lock the bike or wear a helmet, or warn of black ice. Finally, the technology also opens up possibilities for individualization and design, where the cyclist can, for example, effectively highlight the starting or switching off of the e-bike by using an own light design on the road. The inspiration here was the COB-Line rear light series introduced by TRELOCK last year, which plays a running light effect in the rear light when the e-bike system is switched on. The technology, which can be designed for both front and rear lighting, thus offers forward-looking and exclusive features that make the riding experience safer, more comfortable and more individual for the cyclist.

### **From the light lab to the street**

The new lighting concept was presented for the first time at the Eurobike 2022 in Frankfurt and could be tested live there using a functioning e-bike headlight from the new TRELOCK Lighthammer series. The development of the technology and implementation in an e-bike headlight has therefore already been successfully implemented by the TRELOCK engineers and equipped for all functions in the in-house lighting laboratory. Currently, the Street Screen technology is a trend-setting lighting concept that already received positive feedback from the industry at the Eurobike. Thus, the new lighting technology was confirmed as the basis for further exchange and possible cooperation in the high-quality e-bike segment. Depending on the desired implementation, compliance with the Road Traffic Licensing Regulations in Germany or other countries is a matter of course for the individual configuration.

**Press Contact:**  
...kernpunkt.PR  
Schraudolphstr. 3a  
80799 München  
Tel.: +49 1520 8695056  
info@kernpunktpr.de  
www.kernpunktpr.de

TRELOCK GmbH  
Johann-Krane-Weg 37  
48149 Münster  
Tel.: +49 251 91999-0  
TRELOCK@allegion.com  
www.TRELOCK.de

**Examples of use in practice**

Benefit	Examples
Safety	<ul style="list-style-type: none"> <li>• Visual marking of a safety zone when a car gets too close to a cyclist while overtaking and does not maintain the minimum distance</li> <li>• Arrow symbols projected onto the road visualize the turning process to other road users</li> </ul>
Warning function	<ul style="list-style-type: none"> <li>• Danger symbols warn oncoming traffic if the cyclist has to brake abruptly or take evasive action</li> <li>• Cyclists themselves can also be warned in situations where they are confronted with unexpected events, such as opening the door of a parked car or reversing a car out of a parking space</li> </ul>
Comfort and reminder function	<ul style="list-style-type: none"> <li>• E-bike battery status</li> <li>• Bike lock reminder</li> <li>• Helmet wearing</li> <li>• Black ice warning</li> </ul>
Customization and design	<ul style="list-style-type: none"> <li>• Starting or switching off the e-bike is effectively highlighted by an individual light design on the street</li> <li>• Logo projection of bicycle brands</li> <li>• Personalized light setting</li> </ul>

**About TRELOCK**

TRELOCK is a traditional brand from Münster and one of the best known and oldest German accessory brands in the bicycle industry. Every fourth cyclist in Germany is familiar with TRELOCK. With the know-how of over 160 years, TRELOCK stands in many countries of the world for high-quality and reliable products in the areas of bicycle locks, lighting and displays. The brand convinces with innovative products on the pulse of time and is part of the Allegion brand family since 2016.

For more information and images, visit [www.trelock.de](http://www.trelock.de) or the press section at [www.kernpunktpr.de](http://www.kernpunktpr.de).

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**Press Contact:**

...kernpunkt.PR  
Schraudolphstr. 3a  
80799 München  
Tel.: +49 1520 8695056  
info@kernpunktpr.de  
[www.kernpunktpr.de](http://www.kernpunktpr.de)

TRELOCK GmbH  
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